MEMO

DATE: July 23, 2004

TO: Transportation & Communications Committee

FROM: Naresh Amatya, Lead Regional Planner,
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RE: Report on Statewide Performance Measures Development

RECOMMENDED ACTION: Information Only.

SUMMARY:

Under the direction of California Business, Transportation and Housing Secretary Sunne McPeak, Caltrans is in the process of developing statewide transportation system performance measures that are designed to help influence policies, practices and decision making of transportation agencies as well as individual system users. While Caltrans headquarters is leading this statewide effort, the steering committee and the technical support team that is guiding this process consists of transportation planning agencies throughout the state, including SCAG, MTC, RTPAs representing rural areas, Caltrans District offices as well as transit operators.

The first phase of this effort primarily consisted of establishing and identifying key performance outcomes/measures, potential data sources, responsible parties, and potential time frame for their implementation. The efforts of this phase was summarized in a report and submitted to Secretary McPeak on July 30, 2004 for her consideration. Based on the input from the stakeholders, nine performance outcomes/measures, which are consistent with SCAG's measures, were identified through this process. The nine performance measures are: 1) Mobility/Reliability/Accessibility; 2) Productivity; 3) System Preservation; 4) Safety; 5) Environmental Quality; 6) Coordinated Transportation and Land Use; 7) Economic Development; 8) Return on Investment; 9) Equity.

The second phase of this effort, which was kicked-off on September 16, 2004, involves developing an implementation or an action plan for the utilization of performance measures on a statewide basis. The goal is to develop a prototype system performance report by January 2005 for the first six performance outcomes/measures. The lessons learned from this prototype performance report development will be utilized in further refining and establishing statewide performance measures over the next twelve month period.

Attachment: Transportation System Performance Outcome/Measures report submitted to Secretary McPeak on July 30, 04.

#104301 v1 - Statewide Perofrmance Measures Report to TCC

TRANSPORTATION SYSTEM PERFORMANCE OUTCOMES/MEASURES PROGRESS REPORT AND IMPLEMENTATION PLAN PROPOSAL

This document summarizes the progress to date of efforts to develop and reach consensus on performance outcomes/measures through stakeholder collaboration. The implementation plan proposal frames the critical next steps to implement the transportation system performance measures. Further efforts and workshops will refine the proposal and develop a project implementation work plan. The work plan will determine how to proceed in the following areas: consensus building, incremental implementation of performance measures including "piloted" implementation in several regions, resolving the lack of complete data for some measures, linking performance measures into decision support activities and guidance, and developing less data intensive and meaningful surrogate indicators for rural regions of the State. The effort is a direct response to recommendations of the Transportation Expert Review Panel as part of the Performance Improvement Initiative sponsored by Secretary Sunne Wright McPeak of the California Business, Transportation and Housing Agency.

Why Transportation System Performance Measures?

Secretary McPeak initiated the current effort to improve the effectiveness and efficiency of transportation decision making in California by developing and implementing system performance measures. While maintaining and improving the mobility of California's people, goods and information is the overall goal, system performance measures help optimize transportation's impacts on the Economy, Environment and Equity. They will help improve collaboration and accountability, manage transportation systems and modes, streamline and improve business practices and relationships, and provide a framework for improved decision making. Simply stated, System Performance Measures are a set of practices to systematically look at and gauge transportation system performance, and then guide and influence policy decisions, business practices and behavior of decision makers and system users.

> *"If you don't measure results, you can't tell success from failure. If you can't see success, you can't reward it. If you can't see failure, you can't correct it."*
>
> Osbourne & Gaebler
> Reinventing

How will Performance Measures be used?

The 20,000-foot strategic perspective on performance measures use is relatively clear: use performance measures to influence policies, practices and behaviors of transportation agencies, stakeholders and system users. Transportation agencies can use performance measures to evaluate and monitor the results of changes in policies, goals and priorities. Performance measures also can indicate the need to change policies. Business practices rely on performance measures to identify methods and strategies to achieve focus and improve business efficiency and effectiveness. Frequently, performance measures information causes change in behavior. The challenge is to show how performance measures help improve internal communication between a

department's top management and staff; manage business functions to improve effectiveness, efficiency and accountability; provide decision support for planning, project selection, budgeting and investment decisions; and improve communications between transportation business partners, stakeholders and customer groups. The key is integrating performance measures into business functions to strengthen and streamline ongoing activities including long-range planning; budgeting; project refinement, selection, and implementation; operations; and maintenance. Performance measures will ultimately drive improved business decisions.

What has been done to date?

A team representing public and private sector transportation interests and stakeholders began efforts to define and reach consensus on a set of transportation system performance outcomes/measures in late May 2004. The team used direction from Secretary McPeak, and built on previous efforts of the Department and Metropolitan Planning Organizations, including the Southern California Association of Governments and the Metropolitan Transportation Commission. The team tasked a representative sub-team with refining the initial set of performance outcomes/measures. The sub-team expended considerable effort to refine, research and reach agreement on nine key system outcomes or areas essential to measure performance, data to collect and report, and who collects the data. The team will continue to better define the timeframe and analysis aggregation level. The nine performance outcome/measure areas agreed to by the team are:

1. Mobility/Reliability/Accessibility
2. Productivity
3. System Preservation
4. Safety
5. Environmental Quality
6. Coordinated Transportation and Land Use
7. Economic Development
8. Return On Investment
9. Equity

Key indicators have been identified for Outcomes 1 through 6. Data is available for some of these key indicators, but not all. Where data is available, efforts to collect and begin measurement will be initiated shortly. Outcomes and their key indicators have been identified as follows:

Group A:	Outcome developed. Complete data not available for indicator. Reporting can be initiated with existing available data. Work plan required for remaining data collection needs.
Group B:	Outcome developed. Indicator has no data available. Work plan required for data collection needs.
Group C:	Outcome and/or key indicator not fully developed. Needs further discussion and development with experts and agencies outside the team.

IMPLEMENTATION PLAN PROPOSAL (NEXT STEPS)

The implementation plan proposal focuses on enhancing performance measures consensus, beginning staged implementation of monitoring and reporting of measures where the right data is available, refining the measures and indicators requiring additional work and completing "pilots" of key planning and programming decision products to demonstrate the integration of performance measures into decision support. Performance measures implementation requires transportation partners and stakeholders working closely together to maintain consensus, identify implementation obstacles and opportunities, jointly develop solutions and demonstrate results. Key is maintaining the current dialogue between Agency leadership, the Department, the Regional Transportation Planning Agencies and other transportation stakeholders and interests. A representative team will use a workshop setting to initiate turning this proposal into a work plan. The work plan will identify deliverables, timelines and outcomes for each task, as well as frame the pilots. The following highlights the upcoming major steps and discussion needed to move forward:

PHASE 1

- **External Consensus Building** – This activity involves building, maintaining and enhancing partnerships between transportation partners and stakeholders. A critical element is developing common understanding of performance measures terminology, use and roles and responsibilities. Questions include: Do the measures and indicators communicate critical data and analysis information? How can we make the measures drive policy, business and behavioral decisions? Who is responsible for reporting and what timeframe? What are the opportunities for integrating performance measures to show how they add value to decisions? The intent is to make performance measures understandable and real. (Commence this activity immediately. Intense communications and marketing efforts to occur over next 12 months.)

- **Internal Consensus Building Within the Department** – Ultimately, information generated through performance measurement will influence policies and decision-making within the Department to improve accountability, business-to-business relationships and performance. Target areas include short- and long-range planning (e.g., State Transportation Plan, Modal Plans, Transportation Corridor Reports, corridor studies and transportation modeling); operational analysis; project studies and selection (e.g., Project Initiation Documents and Project Study Reports); and programming (Inter-regional Transportation Improvement Program and State Highway Operations and Protection Program). Continued top-level management support and involvement is critical for success. (Commence this activity immediately to blend with developing revised organization and project performance measures and reporting.)

- **Incremental Implementation of Consensus Measures/Outcomes (Group A)** – Develop "pilots" to demonstrate how performance measures would add value to long-range planning (State and Regional Transportation Planning), project studies and selection (Project Study Reports, Project Initiation Documents and similar studies) and programming (Transportation Improvement Programs). The intent would be to demonstrate that performance measures

meet the needs of transportation agencies, stakeholders and customer groups. Additionally, the Department would initiate an Annual State of the Transportation System Report. This first report would build on previous efforts and result in a statewide prototype report focused on the first six performance outcomes where data exists. It would demonstrate how to organize and communicate the consensus performance measures in a statewide report format for use by transportation agencies, decision makers, stakeholders and the public. (Work plan to set schedule for pilots. Immediately begin initial state of system report, due January 2005.)

- **Identify and Document Data Challenges (Groups A and B)** – Significant gaps in data exist due to inadequate or outdated data collection equipment and reporting requirements, access to data, collecting the wrong data or simply no data collected at all. These challenges hinder comprehensive and consistent data collection and reporting, not only for State highways, but also for local streets and roads, and other modes including transit, rail, bicycles, pedestrians and goods movement. Performance measures need to build on existing data collection and reporting activities as much as possible. Where data is inadequate, performance measures provide the opportunity to focus data collection and reporting on decision data. Hopefully, performance measures implementation would help data collection activities become more effective and efficient. (Begin documentation efforts as part of consensus building and developing pilots. Work with agencies and stakeholders responsible for data collection and decision making to identify and understand data weaknesses, strengths and opportunities to focus data activities to support performance measures while improving efficiency and effectiveness.)

- **Refine Outstanding Performance Outcomes and Indicators (Group C)** – Four of the consensus outcomes require directed research to define indicators, responsible agencies, timeframe and aggregation level. Additional work is required to refine indicators for the remaining outcomes. The intent is to complete the outcomes and indicators that the team identified as requiring assistance from experts outside the team. (Work plan to set schedule to develop and define the outcomes and indicators. Commence this activity immediately.)

PHASE 2

- **Linkages to Decision Support and Guidance Materials** – Performance Measures provide a consistent framework to evaluate performance and performance objectives and propose solutions where performance falls below the objective. Long-range planning is the starting point for decision support (e.g., Corridor Analysis, State and Regional Transportation Plans and then Programming, etc.). Performance measurement is most appropriate for long-range planning. At the regional level, performance measurement fits into the regional transportation plans (RTPs) leading to the Regional Improvement Programs. By incorporating the relevant outcomes into RTPs, programming and project selection would be driven by system performance measures. At the State level, performance measurement fits within the context of the California Transportation Plan, the Inter-regional Transportation Improvement Program (ITIP), and State Highway Operations and Protection Program (SHOPP). Ultimately, performance measures would influence State, regional and local capital, operations, safety and maintenance investment decisions. (This activity builds on the results of the "pilots" and targets Decision Support Guidance. Work plan to proceed and targets to be set by team.)

- **Performance Measures in Rural Regions** - Significant gaps in data and analysis capabilities exist in many rural regions. Many of these regions already agree with the concept of performance measurement as documented in their Regional Transportation Plans. They simply lack the resources and infrastructure to implement performance measures at the same level as urban regions. The Department and the rural regions need to work together to identify to develop less data intensive surrogate indicators where applicable to enable valid performance measures in rural regions. (Initiate effort with Rural Counties Task Force in February 2005.)

Transportation System Performance Team Members

Stakeholders:
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Transportation System Performance Outcomes

System Outcome	General Definition
Mobility/Accessibility/Reliability	Minimize time and cost and maximize choice and dependability. Reach desired destinations within reasonable time, cost, choice, dependability and ease.
Productivity	Maximize throughput or efficiency (system wide).
System Preservation	Preserve the publicly owned transportation system at a specified state of repair or condition. Physical condition of the system.
Safety	Reduce fatalities, injury, and property loss of system users and workers. Facilitate perception of personal safety.
Environmental Quality	Maintain and enhance the quality of the natural and human environment.
Coordinated Transportation and Land Use	Ensure transportation decisions promote and support job/housing proximity.
Economic Development	Contribute to California's economic growth.
Return on Investment	Benefit cost analysis or best return on investment (includes life cycling costing).
Equity	No person shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance. No disproportionate impact based on income and ethnic groups. Ensure equitable sharing of benefits. Ensure accessibility for people with disabilities.

SYSTEM OUTCOME: MOBILITY/ ACCESSIBILITY/RELIABILITY
General definition: Minimize time and cost and maximize choice and dependability. Reach desired destinations within reasonable time, cost, choice, dependability and ease.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)	RESPONSIBLE PARTY (WHO DOES IT?)	TIMEFRAME	AGGREGATION LEVEL
Travel Time (Mobility)	a) Travel time between interregional origins and destinations in key travel corridors (e.g. LA to SF). Actual origins and destinations. Differentiate peak/non-peak or time of year for rural areas. (Under development)	a) Freeways and other State Highways-Caltrans Local Roadways – Cities and counties Intercity Rail-Caltrans Transit/Rail-Operators Aviation-Federal Aviation Administration	a) Now, where detection exists. Actual origins and destinations will take more time.	a) Key interregional trip pairs & corridors, including key goods movement routes: Roll-up by mode (freeways, 3 intercity rail corridors, major interregional airports and commuter rail lines).
	b) Travel time within key regional travel corridors (e.g. SF to San Jose) Actual origins and destinations (Total Trip).	b) RTPAs/MPOs w/Caltrans, transit operators, cities and counties	b) Now, where detection exists. Actual origins and destinations (total trip) will take more time.	b) Key regional trip pairs & corridors, including key goods movement routes: By mode/operator, regional and statewide

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)	RESPONSIBLE PARTY (WHO DOES IT?)	TIMEFRAME	AGGREGATION LEVEL
Travel Delay (Mobility)	a) Total person (passenger) hours of delay – on-time performance in key corridors (difference between actual and scheduled travel time). Need to develop consensus on standard delay definition to use for all modes, including local and State conventional highways, expressways, roadways. (For example, 55 mph and 35 mph or less for 15 minutes or more on freeways; no more than 1 minute early or 5 minutes late for fixed route transit).	a) Freeways and other State Highways– Caltrans Local roadways – Cities and counties Intercity Rail-Caltrans Commuter Rail (Altamont Commuter Express, Caltrain, etc)-Operators Transit / Rail Operators Ferry Boat Operators	a) Start Now, where data is available and where detection exists. Data not available throughout (1-3 years for transit; 3-5 years for local roadways)	a) Statewide, regional, corridor and mode/facility type.

GROUP A:

Outcome developed. Complete data not available for indicator. Reporting can be initiated with available data. Work plan required for remaining data collection needs.

SYSTEM OUTCOME: MOBILITY/ ACCESSIBILITY/RELIABILITY
General definition: Minimize time and cost and maximize choice and dependability. Reach desired destinations within reasonable time, cost, choice, dependability and ease.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
Travel Time (Mobility)	Travel time within key regional travel corridors (e.g. SF to San Jose) Actual origins and destinations (Total Trip).
Travel Delay (Mobility)	Total person (passenger) hours of delay – on-time performance in key corridors (difference between actual and scheduled travel time). Need to develop consensus on standard delay definition to use for all modes, including local and State conventional highways, expressways, roadways. (For example, 55 mph and 35 mph or less for 15 minutes or more on freeways; no more than 1 minute early or 5 minutes late for fixed route transit).
% On-Time Performance Travel (Reliability)	a) % on-time performance in key corridors [for example, not more than 1 minute early or 5 minutes late (fixed route transit)] Variability in travel time between interregional and within regional origin and destinations in key travel corridors.
Accessibility Availability of feasible travel choices (mode availability and utility)	a) List modes available at key transportation centers b) % of workers within X (15, 30 and 45, and 60) minutes of their jobs (variable indicator for rural area) c) Modal split (including choice ridership) d) % roadways with bike facilities e) % of all jobs within a quarter/half mile of a transit station or corridor (within a. 10 min, b. 20 min, c. 60 min, d. > 60 min frequency) f) % of population within one quarter/half mile of transit station/corridor (within a. 10 min, b. 20 min, c. 60 min, d. > 60 min frequency)

SYSTEM OUTCOME: PRODUCTIVITY
General definition: Maximize throughput or efficiency (system wide).

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
Throughput: persons, vehicles, goods movement	a) % of people traveling through a corridor or transportation facility versus carrying capacity (peak and total) b) % of vehicle capacity used c) Passengers per vehicle service mile (transit) d) % trucks by axle flowing through key corridors

SYSTEM OUTCOME: SYSTEM PRESERVATION
General Definition: Preserve the publicly owned transportation system at a specified state of repair or condition. Physical condition of the system.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
Asset Condition Highway, Streets, and Roads	a) Pavement – smoothness and distressed miles, etc. b) Bridges (Bridge Health Index, Bridges Structurally Deficient or Functionally Obsolete) c) Roadside
Transit and Passenger Rail	a) Vehicle fleet age and mileage b) Miles between service calls c) Transit guide way (e.g. rail and structures) condition
Aviation	General and commercial aviation runway pavement condition.
Pedestrian and bicycle facilities	Pedestrian and Bicycle Facilities Condition

SYSTEM OUTCOME: SAFETY
General definition: Reduce fatalities, injury and property loss of system users and workers. Facilitate perception of personal safety.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
Traveler Safety	Injuries, Fatals, Property Damage, and Collisions - Rates and Totals.
Transportation Worker Safety – All agencies	Worker Fatalities and Injuries (Rates and Totals).
Crime statistics at transportation facilities	Crime statistics at transportation facilities (e.g., rest stops, stations, park and ride lots, and in fleet vehicles).

SYSTEM OUTCOME: ENVIRONMENTAL QUALITY
General definition: Maintain and enhance the quality of the natural and human environment.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
Air Quality	a) Total emissions and rates (passenger mile and ton-mile). b) Days exceeding national/state standards by region/air basin and Statewide.
Noise	Number of residential units exposed to transportation generated noise exceeding standards
Energy Consumption	Fossil fuel use for transportation in relation to Passenger Miles Traveled
KEY INDICATORS	**DATA TO COLLECT AND REPORT (All Modes)**
Health of Ecosystems	a) Net gain/loss of wetlands, in acres, from transportation projects b) Number of wildlife corridors and fish passages restored on/under transportation corridors c) Net gain/loss of threatened & endangered species habitat, including critical habitat, in acres, as a result of transportation projects

SYSTEM OUTCOME: COORDINATED TRANSPORTATION AND LAND USE
General definition: Ensure transportation decisions promote and support job/housing proximity.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
	a) Single Occupancy Vehicle trips per household b) Passenger vehicle miles traveled/capita

GROUP B:

Outcome developed. Indicator has no data available. Work plan required for data collection needs.

SYSTEM OUTCOME: MOBILITY/ ACCESSIBILITY/RELIABILITY
General definition: Minimize time and cost and maximize choice and dependability. Reach desired destinations within reasonable time, cost, choice, dependability and ease.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
Travel Time (Mobility)	Travel time between interregional origins and destinations in key travel corridors (e.g. LA to SF). Actual origins and destinations. Differentiate peak/non-peak or time of year for rural areas.

SYSTEM OUTCOME: SAFETY
General definition: Reduce fatalities, injury and property loss of system users and workers. Facilitate perception of personal safety.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
Transportation Worker Safety – Private sector contractors.	Worker Fatalities and Injuries (Rates and Totals) – Private Sector Contractors

SYSTEM OUTCOME: ENVIRONMENTAL QUALITY
General definition: Maintain and enhance the quality of the natural and human environment.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
Air Quality	Health impacts

GROUP C:

Outcome and/or key indicator not fully developed. Needs further discussion and development with experts and agencies outside the team.

SYSTEM OUTCOME: ENVIRONMENTAL QUALITY
General definition: Maintain and enhance the quality of the natural and human environment.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
Water Quality	Number of violations of water quality standards

SYSTEM OUTCOME: COORDINATED TRANSPORTATION AND LAND USE
General definition: Ensure transportation decisions promote and support job/housing proximity.

KEY INDICATORS	DATA TO COLLECT AND REPORT (All Modes)
	a) Number of major transit stations with density appropriate to the level and type of service. b) Number of general plans comprehensively updated (including transportation, land use, and housing elements) in last 10 years.

SYSTEM OUTCOME: ECONOMIC DEVELOPMENT
General definition: Contribute to California's economic growth. (Note: Economic development is where you have no economy. Economic growth is where you have an economy.)

(ON HOLD FOR FURTHER DEVELOPMENT)

SYSTEM OUTCOME: RETURN ON INVESTMENT
General definition: Benefit cost analysis or best return on investment (Includes Life cycle costing)

(ON HOLD FOR FURTHER DEVELOPMENT)

SYSTEM OUTCOME: EQUITY
General definition: No person shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance.

No disproportionate impact based on income and ethnic groups. Ensure equitable sharing of benefits. Ensure accessibility for people with disabilities.

(ON HOLD FOR FURTHER DEVELOPMENT)